

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the reasons that follow. Claims 1-8, 13-18, and 21-22 remain pending in this application.

Applicant would like to thank the Examiner for acknowledging receipt of the papers submitted under 35 U.S.C. 119(a)-(d) and for accepting the drawings received on February 10, 2006.

Interview Summary

Applicant wishes to thank the Examiner for the courtesy extended to Applicant's representative, Mr. Matthew Kremer, during the interview conducted on May 15, 2007. The Examiner gave Mr. Kremer an interview summary at the end of the interview which sets forth the substance of the interview. The statements made in the Interview Summary are correct.

Rejection of claims 1-2 and 13-14 based on the Description of the Prior Art and Kim

Claims 1-2 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Instant Application's Description of the Prior Art ("the Description of the Prior Art") in view of U.S. Patent 6,097,457 ("Kim"). This rejection is traversed for at least the following reasons.

Claim 1 recites "the narrowest distance between the first wire and the second wire but not including the first and second wire is more than or equal to 5 μ m." Claim 13 recites a similar feature. The Description of the Prior Art does not teach or suggest this feature, as acknowledged by the PTO. (See paragraph 5 of the Office Action.)

To establish a *prima facie* case of obviousness, there must be some reason to modify the reference or to combine reference teachings and the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzah*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). In this case, there is no suggestion or motivation, either in the references themselves or in the knowledge generally

available to one of ordinary skill in the art, to modify the Description of the Prior Art in view of Kim to achieve the claimed invention.

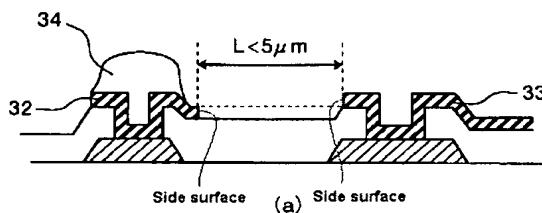
The PTO relies on Kim to allegedly teach “the narrowest distance [Fig. 6; W₂] between a first wire [Fig. 6; 31-1] and a second wire [Fig. 6; 31-2] but not including the first and second wire is more than or equal to 5 μm (see Column 4, Lines 37-50).” (Paragraph 5 of the Office Action.) The PTO then asserts that “it would have been obvious to one of ordinary skill in the art at the time of invention to use Kim’s wire distance between the first and second wires of the Instant Application’s Description of the Prior Art, so as to minimize signal distortion and delay in the resultant display.” It appears that the PTO is asserting that it is the distance between the wires in Kim that minimizes signal distortion and delay in the resultant display. However, Kim does not teach or suggest that the wire distances are relevant at all toward this solution. In particular, the reason that the “signal transmitting/receiving devices tend to interfere with each other’s signals” (as disclosed in Kim) is that the two devices have a coupling capacitance. The capacitance of a parallel-plate capacitor is given by: $C \approx \frac{\epsilon A}{d}$; $A \gg d^2$, where ϵ is the permittivity of the dielectric, A is the area of the plates and d is the spacing between them. Kim even states:

The structure according to the present invention minimizes the overlap between the light-shielding layer and the driver wires in the driver circuit. Accordingly, it is possible to reduce the coupling capacitance caused by the overlap between the light-shielding layer and the driver wires in the driver circuit.

As described in the present invention, coupling capacitance can be reduced by forming a pattern of the light-shielding layer to have a minimal overlap with the driver [wires], thereby minimizing signal distortion and delay in the LCD.” (Column 4, Lines 50-60 of Kim)

The above passage of Kim clearly shows that the coupling capacitance is caused by the overlapping area (A) between the two layers. Thus, Kim relies upon the formation of a pattern of the light-shielding layer to have a minimal overlap with the driver wires for the desired effect, and the wire distance of Kim is not significant with respect to the signal distortion and delay in the LCD. In other words, Kim does not even disclose that the wire distance is a variable that would effect the minimization of signal distortion and delay. (For

example, see MPEP 2144.05.¹) Additionally, the Description of the Prior Art does not teach or suggest a problem with signal distortion or delay, and it is unlikely that one with ordinary skill in the art would have been motivated to use the teachings of Kim to correct such a problem. Also, one with ordinary skill in the art would not need to space the surface wires of the Description of the Prior Art farther apart so as to diminish the interference between each other (as disclosed in Kim) because the surface wires of the Description of the Prior Art do not overlap each other and the coupling capacitance is very small. Even the side surfaces of the surface wires of the Description of the Prior Art are not overlapped with each other, as seen in the Figure below.



Moreover, Kim does not teach or suggest anything related to a wire having an exposed surface, much less why one would use first and second wires having exposed surfaces and make a wire distance between the first and second wires which is more than or equal to 5 μm . Thus, one with ordinary skill in the art would not equate the two teachings such that one would use the features of Kim (which does not teach exposed surfaces) with the features of the Description of the Prior Art (which does use exposed surfaces).

Therefore, it is respectfully submitted that the PTO has not provided a proper or sufficient reason to modify the Description of the Prior Art with the teachings of Kim so as to achieve the invention of claim 1 or 13. Thus, a rejection based on any combination of the Description of the Prior Art and Kim is improper.

Claims 2 and 14 depend from and have all the limitations of either claim 1 or claim 13, and are allowable for at least the reasons set forth above without regard to the further patentable features contained therein.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

¹ “A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.” *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977)

Rejection of claims 4-6, 16-17, and 21-22 based on the Description of the Prior Art

Claims 4-6, 16-17, and 21-22 are rejected under 35 U.S.C. 102(a) as being anticipated by the Description of the Prior Art. This rejection is traversed for at least the following reasons. As an initial matter, the rejection is improper because the PTO asserts “[r]egarding claim 4, this claim is rejected by the reasoning applied in rejecting claim 1.” However, claim 1 was rejected under 35 U.S.C. 103(a) based on the Description of the Prior Art in view of Kim. Thus, the PTO rejection of claim 4 based on two references in which one reference is being modified using a 103(a) analysis is improper for an anticipatory rejection under 35 U.S.C. 102(a) according to MPEP 706.02.² Thus, the rejection is improper, and should be withdrawn.

Assuming the rejection is an anticipatory rejection under 102(a), the rejection based on the Description of the Prior Art is traversed for at least the following reasons. Claim 4 recites “an insulator in direct physical contact with the entire exposed surface of at least one of the first and second wires such that no portion of the at least one of the first and second wires is in direct physical contact with the liquid crystal layer.” Claim 16 recites a similar feature. The Description of the Prior Art does not teach or suggest this combination of features. For example, FIG. 10 of the Description of the Prior Art clearly shows that the liquid crystal layer 50 contacts a portion of wire 47. Thus, the Description of the Prior Art does not teach all of the features of claims 4 or 16. Accordingly, the rejection is improper.

Assuming the rejection is an obviousness rejection under 103(a) based on the Description of the Prior Art and Kim, Kim does not cure the deficiencies of the Description of the Prior Art and any combination of the Description of the Prior Art and Kim is improper, as discussed above.

Claims 5-6, 17, and 21-22 depend from and have all the limitations of either claim 4 or claim 16, and are allowable for at least the reasons set forth above without regard to the further patentable features contained therein.

² “The distinction between rejections based on 35 U.S.C. 102 and those based on 35 U.S.C. 103 should be kept in mind. Under the former, the claim is anticipated by the reference. No question of obviousness is present. In other words, for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. Whereas, in a rejection based on 35 U.S.C. 103, the reference teachings must somehow be modified in order to meet the claims. The modification must be one which would have been obvious to one of ordinary skill in the art at the time the invention was made. See MPEP § 2131 - § 2146 for guidance on patentability determinations under 35 U.S.C. 102 and 103.” MPEP 706.02

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claims 3 and 15 based on Description of the Prior Art, Kim, and Kwon

Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Description of the Prior Art and Kim in view of U.S. Patent 6,486,930 (“Kwon”). Claims 3 and 15 depend from and have all the limitations of either claim 1 or 13. As previously mentioned, the Description of the Prior Art does not teach or suggest “the narrowest distance between the first wire and the second wire but not including the first and second wire is more than or equal to 5 μ m” as required by claims 1 and 13, and any combination of the Description of the Prior Art and Kim is improper. Kwon fails to cure these deficiencies. For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claims 8 and 18 based on Description of the Prior Art and Kwon

Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Description of the Prior Art in view of Kwon. It is noted that the PTO states that “[r]egarding claim 8, this claim is rejected by the reasoning applied in rejecting claim 3” and “[r]egarding claim 18, this claim is rejected by the reasoning applied in rejecting claims 3 and 15.” The rejection is unclear and incomplete in violation of MPEP 707.07 because claim 3 was rejected using a different set of references (the Description of the Prior Art, Kim, and Kwon) than the set of references being used to reject claims 8 and 18 (the Description of the Prior Art and Kwon). Accordingly, this rejection is improper.

Also, claims 8 and 18 depend from and have all the limitations of either claim 4 or 16. As previously mentioned, the Description of the Prior Art does not teach or suggest “an insulator in direct physical contact with the entire exposed surface of at least one of the first and second wires such that no portion of the at least one of the first and second wires is in direct physical contact with the liquid crystal layer” as required by claims 4 and 16, and any combination of the Description of the Prior Art and Kim is improper. Kwon fails to cure these deficiencies. For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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